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(54) METHOD AND DEVICE FOR DETECTING LEAK OF HOLLOW FIBER MEMBRANE TYPE LIQUID PROCESSOR

(57) Abstract:

PURPOSE: To detect the presence and absence of leak even when a hollow fiber membrane with a full extended tip exists in a hollow fiber bundle by detecting a moving distance in a route means on a boundry between charged water and gas with pressure drop by using a gauge or a sensor.

CONSTITUTION: A gas lead-in port opening/closing valve 9a is closed and a charging water lead-in port opening/closing valve 8a is opened. Then, charging water (RO water) is charged through a route tube body 7 and a blood port 5b into a hollow fiber membrane 2a. Continuously, the opening/closing valve 8a is closed and the gas lead-in port opening/closing valve 9a is opened.

Then, pressurization with high pressure is executed by a pressurizing pump. After the pressurization, the opening/closing valve 9a is closed and left for prescribed time. When there is a pin hole, etc., in any hollow fiber membrane 2a, the RO water is leaked from the part and the internal pressure falls down by the leakage. Then, in a leak discriminating part A, a boundary 11 between the RO water and air is moved to the side of the hollow fiber membrane 2a. Accordingly, by detecting the moving quantity of this boundary 11 with a gauge 12 and calculating the moving quantity for each unit time, the presence and absence of the leak can be discriminated.